

V

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CAUTLEY, R., BEEBE, G. W. and DICKINSON, R. L.
"Rubber Sheaths as Venereal Disease Prophylactics: the Relation of Quality and Technique to their Effectiveness." *Amer. J. M. Sci.* 1938, v. 195, 155-63.

THERE is little doubt that the use of a condom is the best single method as a prophylaxis against syphilis and gonorrhœa; at any rate, so long as it remains intact it protects the parts which it covers. It will be seen, therefore, that quality is of great importance.

In the U.S. 2 concerns produce more than 50 per cent. and 5 concerns more than 90 per cent. of the total production of condoms estimated at 317 millions yearly with a retail value of about 25 million dollars.

Manufacturing methods have improved considerably during the past 7 years, but improvements in testing have not kept pace with those in production; only about one-third of all sheaths sold are bought from drug stores, the remainder being retailed by peddlers, tobacco kiosks, restaurants, boot-blacks and the like. Many of these retail articles have been found defective.

In 1934-5 Voge tested more than 2,000 sheaths obtained from 21 different sources and found only about 40 per cent. of them "perfect"; defects included "pin-holes," inability to withstand moderate inflation and "flaws." For testing the condom was inflated to form an ellipsoid about 8 inches long by 6 inches in diameter; examination was then carried out to see if inflation remained for 15 to 20 minutes, and if any flaws could be detected against a light background.

In order to obtain the greatest protection from a sheath a reliable brand should be employed and the patient instructed by the physician in its testing and use. Testing may be carried out with air or water. The sheath should stand inflation to about 11×8 inches

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and is then examined against the light for flaws. Before use the sheath should be placed on two fingers of one hand and then rolled gently and evenly with two fingers of the other hand to the tips of the first two fingers; adequate lubrication is advisable to prevent tears and for this purpose a water dispersable lubricating jelly is the best. After use the condom should be carefully removed "as a glove is stripped from the hand." Good rubber sheaths remain in good condition for two years.

It is concluded that steps should be taken to ensure the dependability and adequate testing of sheaths; physicians should be able to guide their patients in the purchase, testing and use of these articles. Better methods of testing require elaboration.

T. E. OSMOND.

WEBSTER, HELENA J. "Venereal Disease in Women and Children." *Pub. Health*. 1937, v. 51, 47-9.

THIS paper gives interesting information bearing on the incidence of syphilis in women and children attending M. and C.W. and school clinics in Cardiff. From June 1925 to the end of 1927, of 1,867 specimens of blood taken from pregnant females attending the antenatal clinics 3.1 per cent. were positive. Since 1927 roughly 900 to 1,000 such cases have been tested each year, the 3.1 per cent. of 1927 was not exceeded and in 1933 the percentage of positive reactions was 1.5, but in 1936 it rose to 2. In most of the cases there was no history of infection, and in seven years the author can recall having seen only four cases of primary chancre, two being in pregnant women. In 1936 the number of pregnant women referred for treatment was 18, and afterwards of 11 babies that were tested all were negative; at the time of writing, for one reason or another, the remaining 7 had not yet been tested.

The number of children with congenital syphilis referred from infant welfare and school clinics appears to have fallen considerably. In 1936 of 4 that were referred on suspicion of infection, 2 were positive and 2 doubtful; in 1937 up to July 3rd none had been referred.

L. W. HARRISON.

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PARRAN, T. "Control of Syphilis: Clinical Lecture at Atlantic City Session. *J. Amer. M. Ass.* 1937, v. 109, 205-7.

MANY factors must be taken into consideration for the adequate control of syphilis. The problem is essentially a public health one comparable with that of small-pox—and the same laws and regulations should apply to both. First and foremost the public must be informed of the prevalence and ravages of syphilis—only then will they respond. We know the cause of syphilis, how it spreads, how infection can be prevented, how it can be diagnosed and how treated; it only remains to make full use of this knowledge. Each town, county or area must apply appropriate methods according to circumstances, but certain broad principles may be summarised as follows:—

1. A trained staff in every area.
2. Laws for reporting, follow up and tracing of contacts.
3. Pre-marital medical certificates.
4. Free diagnostic service and supply of drugs.
5. Treatment clinics should have convenient hours and situations.
6. Routine serodiagnostic testing.
7. Information in diagnosis, treatment and control should be available for all—especially through trained consultants.
8. Public education should be persistent and intensive.

T. E. OSMOND.

CLARKE, C. W. "The New York City Plan for Combating Syphilis." *J. Amer. M. Ass.* 1937, v. 109, 1021-4.

IN New York over 50,000 newly diagnosed cases of syphilis are reported annually, whereas it is estimated that there are in the city about 378,000 cases. It is suggested that practitioners have the opportunity of seeing more cases than all the institutions combined and it is through them that the problem should be tackled.

To help the practitioner the following are available:—

- (1) Diagnostic services—including free serum tests, dark-field examinations and consultations.
- (2) Treatment services—free supply of suitable drugs

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irrespective of the financial status of the patient ; trained nurses to follow up lapsed cases of syphilis or gonorrhœa.

- (3) Epidemiologic service. The Department of Health aids the physician in finding the source of infection in cases of early or congenital syphilis or syphilis complicating pregnancy.
- (4) Educational activities include provision of a pamphlet with instructions regarding infection and contacts to be given to every patient ; post-graduate instruction in modern methods.
- (5) Reporting. The physician is provided with a form (initials only and address may be given) and postage is free.

There are fifty clinics in voluntary hospitals in New York City ; to those which charge low fees drugs are supplied free. Where these clinics cannot induce lapsed cases to return the Department of Health employs its legal authority to this end.

City tax-supported hospitals need more bed accommodation ; they cannot compel a patient to undergo treatment, but anyone refusing may be reported to the Department of Health, which can order such patient into hospital.

The Department of Health has as its duty the promoting, directing and aiding of the attack on communicable syphilis, and maintains 10 treatment centres, includes a Bureau of Social Hygiene and co-operates with the W.P.A.

From 1935 to 1936 individual patients given treatment increased by 44 per cent., treated cases of syphilis by 41 per cent. and treated new cases of gonorrhœa by 25 per cent. ; there has been a great increase in case finding and most of these cases have been disposed of to physicians and non-department clinics.

With the above programme, modified as progress is made, it is thought that a good start has been made and that perseverance will lead to a radical reduction in the incidence of syphilis.

T. E. OSMOND.

THOMPSON, L. " Observations on McLeod's Method for Culturing the Gonococcus." *J. Infect. Dis.* 1937, v. 61, 129-33, 3 figs.

THE author has found McLeod's method of growing

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gonococci in an atmosphere of 8 to 10 per cent. CO₂ more successful than others because the gonococcus is carbon-dioxidophilic and grows rapidly in such an atmosphere. The oxydase reaction of Gordon and McLeod is very valuable for detection of colonies which might otherwise be missed, but it has certain limitations in being positive with some other bacteria found in the genito-urinary tract. Most of these are easily distinguished by the appearance of their colonies, but two described here have rather similar colonies. One is a small Gram-negative rod and the other a Gram-negative diplobacillus or diplococcus. For these reasons smears should be made from colonies giving the oxydase reaction, and, further, until the worker has acquired considerable experience of the morphological appearance of gonococci from cultures each strain, before being diagnosed as gonococcal, should be isolated in pure culture and tested for ability to grow on plain nutrient agar.

L. W. HARRISON.

REICHERT, J. L., EPSTEIN, I. M., JUNG, RUTH, and COLWELL, CHARLOTTE A. "Infection of the Lower Part of the Genital Tract in Girls." *Amer. J. Dis. Children*. 1937, v. 54, 59-94. [76 refs.]

THIS long article contains a description of a very careful investigation of 121 cases of "infection of the lower part of the genital tract in girls." The authors state that the usual expression "vulvo-vaginitis" is misleading and prefer that used in the title because they say that vaginitis is not always a prominent feature whereas cervicitis occurs in nearly every case, and urethritis in 25-50 per cent. of cases. Of the 121 cases 76.6 per cent. were gonococcal and 23.4 non-specific; 24 different organisms were implicated in the latter, diphtheroids, staphylococci, streptococci and *B. coli* being the most common; in three cases *B. dysenteriae* Flexner and in two trichomonas vaginalis were observed.

An account is given of the signs and symptoms, clinical and bacteriological examination and treatment of the two types of case.

It is interesting to note that of 71 cases of gonorrhœa more than half were contracted in the home, 20 per cent. in institutions and public places and 6 per cent. by sexual

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contact, whilst in every case but one the source of infection was an adult.

Treatment was mostly local, consisting of filling the vagina with tragacanth jelly in which were incorporated various antiseptics; of these 2 per cent. strong protein silver proved the best and 2 per cent. mercurochrome the least effective in the gonorrhœal cases. With the former 80 per cent. of cases were apparently cured in 1·5 months with recurrence in 10 per cent. All the non-specific cases were apparently cured in an average of 1·2 months.

Œstrogen, tried in 32 cases, gave good results in 19, temporary in 5 and unsatisfactory in 8; untoward constitutional reactions occurred in 3 cases and on the whole results were about equal to those obtained with local antiseptics.

One or two points in this article call for remark:—

- (1) No case of gonococcal infection of the rectum was seen. This is contrary to the usual experience and suggests that the culture medium employed or the technique were not as good as they should have been.
- (2) It is stated that 204 cultures and over 2,000 smears were examined from 121 patients. This works out at about 2·2 cultures and 16·5 smears per case. These numbers seem very small seeing that specimens were presumably taken from five situations, vulva, vagina, urethra, cervix and rectum.

T. E. OSMOND.

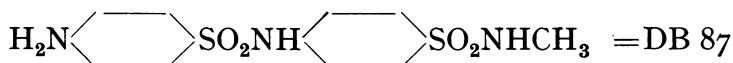
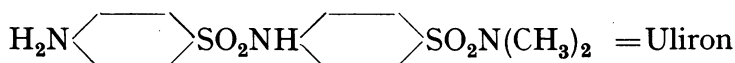
LÖHE, H., SCHÖLZKE, K., and ZÜRN, D. "Neue Wege in der Gonorrhoebehandlung." [New Methods of Treating Gonorrhœa.] *Med. Klin.*, 1938, v. 34, 11-14.

THE authors refer first to the reports of various workers on the sulphonamide preparation, Prontosil, and then to the laboratory preparations, DB 87, DB 90 and DB 32, all three reported on by Grutz, and DB 90 also by Felke.

They have tested DB 90, which is now sold in Germany under the name of "Uliron," and DB 87, to which they refer as Diseptal B, on 200 cases of gonorrhœa. Comparing the effect of Uliron with that of DB 87 or Diseptal B.

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The difference between the two is shown in the following formulæ :—



they found generally that, of cases treated with the latter preparation, 13 per cent. relapsed while in those treated with Uliron the relapses were 48 per cent.

Of the 200 cases, half were women and all but 9 were treated without the help of such local applications as douches, injections and irrigations, an advantage of the chemo-therapy which was especially felt in the case of 4 pregnant women and 5 in the puerperium; another advantage is that the treatment can be continued throughout menstruation.

The usual procedure was to give 2 tablets of 0.5 g. thrice daily for a week, rest for 3 days and test for cure on the 11th, 16th, 21st and 26th day. Commonly gonococci had disappeared by the third day, but if they had not gone by the end of the first course, a second was given after an interval of three days, an injection of Omnadin [a compound vaccine of non-pathogenic bacteria sold by Bayer Products for non-specific protein therapy and given intramuscularly in doses of 2 c.c. daily or every second or third day] or own blood being given in the interval to increase the resistance. The results are shown in the Table on p. 296.

The table indicates clearly the striking therapeutic effect of these preparations, 78 per cent. of the patients being cleared by one week's treatment and 89-91 per cent. by the end of the second course. The details in the text show that the preparations acted well in all forms of gonorrhœa, but perhaps better in the older infections than the earlier. As an example of the powerful effect of the remedies, the following case is noted specially. A patient with a profuse purulent discharge containing large numbers of gonococci took 6 tablets of 0.5 g. at 8 p.m. and next day at 6 a.m., the patient not having urinated in the meantime, no gonococci were found in the smear.

The results in 4 children and 2 infants do not seem to have been good and toxic effects were troublesome.

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TABLE

Results of Treatment by "Uliron" and "Diseptal B"

WOMEN

Locality of Disease	Cases	Cured by One Course	Relapses		
			After 1st Course	After 2nd Course	After 3rd Course
Urethra alone	10	10	—	—	—
Cervix alone	26	21	5	2	—
Rectum alone	3	3	—	—	—
Urethra, cervix and rectum	38	28	10	4	1
With infection of Bartholin's gland	23	16	7	3	3
Totals	100	78	22	9	4

MEN

Anterior urethra	6	4	2	1	1
Anterior and posterior under 4 weeks	21	17	4	2	—
Over 4 weeks	9	8	1	—	—
With prostatitis alone	23	15	8	4	3
With epididymitis alone	27	23	4	2	1
With combined complications of the urethral region	14	11	3	2	1
Totals	100	78	22	11	6

The toxic effects seem to have been much the same as have been noted everywhere from administration of this group of remedies. Rashes of various degrees of severity occurred in 25 cases (15 women and 10 men), but in most cases disappeared in a few days. In a number of these cases there was some albuminuria, and in one this persisted for three weeks. The observation of Grutz that, particularly in men, there occurred more or less turbidity of the urine was confirmed in quite a number of cases. [This effect may give rise to the impression that the gonorrhœa has extended to the posterior urethra and bladder, producing a general cystitis. The urine deposit, however, after centrifugation seems usually to consist mostly of mucus, with only a moderate number of pus cells and no gonococci.] In four cases rather severe

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paresis occurred. In the first, during the third series of Diseptal B tablets (60 g.), a girl of 17 developed paresis of arms and legs, with loss of finger and foot extension and wasting of small muscles of the hand and foot. The condition appears to have been worse four weeks later. In the second, treated with 30 g. Uliron, both feet were affected. In the third, treated with Diseptal B, there was a peroneal paralysis. In the fourth, four days after he had finished taking 54 tablets of Uliron, the patient took 6 more on one day, and two days later had almost complete paralysis of both legs; apparently a month later the condition was much the same.

The authors stress the desirability of these preparations being obtainable only by prescription. Apart from the toxic effects which may result from unskilful administration there is the danger, they say, that a person wishing to hide his or her gonorrhœa has only to take some Uliron tablets on the day before the examination.

L. W. HARRISON.

VAN SLYKE, C. J., THAYER, J. D., and MAHONEY, J. F.
“Sulfanilamide Therapy in Gonococcal Infections.”
Venereal Dis. Information. 1937, v. 18, 417-24.
[17 refs.]

THESE authors, after giving a short historical account of the introduction of this drug, describe their own experiences with it in 100 cases of gonorrhœa. Patients were hospitalised and the routine—in addition to the drug—consisted in a daily urethral smear and two-glass test and fluid intake limited to 1,500 c.c. As soon as signs disappeared a sound was passed into the bladder and the anterior urethra massaged over it, repeated two days later. If these measures produced no sign of relapse massage of the prostate was carried out. The whole procedure was repeated after two days—and if negative the patient was discharged with instructions to report at intervals.

In a group of 17 patients special blood studies were carried out, but as these did not presage toxic symptoms, with the exception of the CO₂ combining power of the plasma, they were discontinued. All specimens were examined by smears (Gram stain) and cultures, employing

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plates of Torrey and Buckell's " B " medium with added hydrocele fluid.

Dosage at first was 1·3 g. 4 times a day in 41 patients and then increased to 1·3 g. every 4 hours in the next 59 cases.

Results—apparent cure was obtained in 84 per cent. of the 100 cases ; in the acute cases the percentage was 76·6 and in the chronic (more than 28 days' duration) 97·2 ; a short intensive course appeared more effective than smaller doses over a longer time, whilst a uniform concentration of the drug in the blood stream seemed to be advantageous. In successful cases marked improvement occurs within two to three days. Toxic manifestations occurred in a large proportion of cases, but no severe reactions were recorded ; a rise of temperature above 38·2° C. was usually regarded as an indication for diminution of the dosage.

No explanation of the failures is offered, but it is suggested that an immune mechanism may be essential for the efficient action of the drug, and this is supported by the greater success obtained in the late cases.

T. E. OSMOND.

CARPENTER, C. M., LEAHY, ALICE D., and WILSON, K. M.
" A Comparison of the Results of the Smear and Cultural Methods for the Diagnosis of Gonococcal Infections in Adult Females." *Amer. J. Syph., etc.* 1938, v. 22, 55-8.

THESE authors carried out a study of 843 parallel smears and cultures obtained from 245 suspected gonococcal cases.

For their cultures they employed the method of McLeod slightly modified as follows :—

Chocolate agar, made from a Douglas agar base, incubated in duplicate at 34° C. and 37° C. in 10 per cent. carbon dioxide for 48 hours. Material was obtained on a swab which was immersed in 1 to 2 c.c. of broth and kept at 4° to 10° C. (up to 8 hours) ; then 0·05 to 0·1 c.c. of this was transferred to a chocolate agar plate and incubated. Smears were made in the ordinary way and stained by Gram's method. In 233 bacteriologically positive cases cultures were positive in 205 (91·9 per cent.)

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and smears were positive in 107 (48 per cent.) ; in 18 instances (8.1 per cent.) the smear was positive and the culture negative.

It will be seen therefore that the cultural method was nearly twice as successful as the smear, but that for the best results both methods should be employed.

[It is difficult to understand why the authors should say "only recently has a simple but reliable cultural method for the diagnosis of gonococcal infection been developed," seeing that, using the medium devised by Thomson,* *at least* two large London V.D. clinics employ *routine smears and cultures* for the diagnosis of gonorrhœa in the female, one of them for the past 15 years.]

T. E. OSMOND.

SOFFER, L. J. "Postarsphenamine Jaundice." *Amer. J. Syph., etc.* 1937, v. 21, 309-38, 3 figs. [56 refs.]

THIS review supplies useful evidence on a number of questions relating to jaundice in patients under anti-syphilitic treatment. Milian's view that most of this jaundice is syphilitic is discredited by a number of facts. Thus in 33,282 untreated cases of syphilis investigated by three groups of authors the incidence of jaundice was found to be from 0.14 to 0.37 per cent., while in treated cases of syphilis it has ranged from 0.6 to 5 per cent. Also arsphenamine jaundice generally occurs in all stages of syphilis and in non-syphilitic persons treated on suspicion. On the other hand, the evidence suggesting a contributory factor in the form of an infection is very strong. The author quotes figures by Stokes and Ruedemann showing how in 5,200 cases treated from 1916 to 1920 without any change of method the peak incidence of jaundice (64 cases) occurred between October, 1919, and April, 1920, which period included the second wave of epidemic influenza. Of the 64 cases, 41 per cent. had upper respiratory infections either just before or in association with the jaundice. Also the data by H. Ruge are even more convincing in this connection. Ruge's figures showed the close parallelism between the incidence of arsphenamine and

* Thomson, D., Medical Research Council Special Report, Series No. 19 (revised), 1923, p. 17.

epidemic jaundice. Ruge therefore believes the two diseases to be identical, and that the part of arsphenamine is to render the liver more susceptible to epidemic infection. The author presents figures from the Johns Hopkins Hospital on the same lines as those of Ruge, showing waves of increasing incidence though the treatment was unchanged. These waves were from 1923 to 1925 and another commencing in 1934 of which the author says the peak "from present indications will probably be reached in 1935." Whatever part bacterial infection may play, there cannot be any doubt that arsenical therapy often damages the liver; of this the author quotes evidence from a number of sources. The incidence of arsphenamine jaundice has varied according to different authors from 0.6 to 5 per cent., but the average is approximately 1 per cent. and it is approximately $1\frac{1}{2}$ times as frequent in arsphenamine- as in neo-arsphenamine-treated cases. The evidence is that the great majority of cases occur during, or after completion of, the first two courses. After this the chances of jaundice occurring are much less; it may be delayed, however, for as long as 40 weeks after the last injection.

The author discusses the causes of the delayed effect, *e.g.*, delayed toxic action, syphilitic hepato-recurrence and superimposition of infectious hepatitis, without being able to decide which is responsible, if indeed one explanation will fit all cases. He discusses the clinical features of his own and other series and records that 81 of the 158 cases comprising his series received further arsenical therapy, and only two appear to have developed any recurrence of the jaundice. In 23 of the 81 cases the arsenical treatment was resumed within 30 days of subsidence of the jaundice; in the remainder the resumption was in one to 16 months. In most cases the dosage on resumption was the same as before the jaundice. The incidence of acute yellow atrophy in the author's series was 6.3 per cent., which compares with 13.9 per cent. in Strathy, Smith and Hanna's series of 58 cases, 2 per cent. in Gordon's 104, and 1.24 per cent. in Ruge's 2,500. In 200,000 general admissions to Massachusetts General Hospital from 1894 to 1927 Sowles found 20 cases, three of them due to arsenical therapy. In 16 cases of the author's series dermatitis was associated. The author quotes histological findings by a number of authors.

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They add nothing to the account by Turnbull in M.R.C. Special Report Series No. 55. The outlook is important. There is much evidence to the effect that arsenical poisoning of the liver may lead to cirrhosis, and a number of cases have now been reported in which it has been attributed to arsphenamine treatment, even when this has not produced jaundice.

L. W. HARRISON.

COCHEMS, K. D., and KEMP, J. E. "Studies in Cardiovascular Syphilis. III. The Effect of Occupation upon the Incidence and Type of Syphilitic Aortitis." *Amer. J. Syph., etc.* 1937, v. 21, 408-12. [12 refs.]

It has long been believed that syphilitic aortitis, and more especially aneurysm, is more liable to occur amongst those whose work is physically heavy and arduous than amongst those who follow a sedentary life. In order to throw light on the matter the authors studied 1,000 cases. All were proved syphilitics; the data included history and physical examination, an analysis by race, sex and occupation, duration of infection, fluoroscopic examination, teleroentgenogram and electrocardiogram.

Of the 1,000 cases 749 were males (704 whites and 45 negroes) and these were divided into groups according as to whether their work was light or heavy. Results are shown in the following table :—

Occupation	No. of Cases	Per cent. with Syphilitic Aortic Disease	Type of Cardiovascular Syphilis			
			Simple Aortitis	Aortic insufficiency	Aneurysm	Aneurysm and Aortic insufficiency
Light . . .	138	12 (8·7%)	7 (5·0%)	1 (0·7%)	2 (1·4%)	2 (1·4%)
Intermediate and heavy	611	88 (14·4%)	23 (3·7%)	13 (2·1%)	37 (6·0%)	15 (2·4%)
Total . . .	749	100 (13·3%)	30 (4·0%)	14 (1·9%)	39 (5·2%)	17 (2·3%)

From the above it will readily be seen that physical exertion seems to contribute towards the graver forms of syphilitic aortitis, especially aneurysm.

T. E. OSMOND.

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RAIZISS, G. W., and SEVERAC, MARIE. "Rapidity with which *Spirochæta pallida* invades the Blood Stream." *Arch. Dermat. & Syph.* 1937, v. 35, 1101-9 [38 refs.]

THE speed of invasion of the blood stream is of practical importance from a number of points of view including risks from transfusion. The authors of this paper quote animal experiments by various authors showing that, after inoculation, the blood stream is invaded long before the primary lesion appears, the shortest period in which the deeper tissues were invaded being half an hour in rabbits and five minutes in guinea-pigs inoculated by Kolle and Evers. Transmission by transfusion has been reported by various workers including over two dozen quoted by Raiziss and Severac. [In some of these the infection was conveyed before the primary sore appeared.] Raiziss and Severac conducted a number of experiments which showed that: (1) Five minutes after intratesticular inoculation the blood of a rabbit could infect others with syphilis. (2) The infectivity of the blood persisted for at least six months and might be present for a year to two and a half years after inoculation, long after all clinical lesions had disappeared. This suggests caution in accepting the statement of McNamara that the blood of persons with tertiary syphilis is safe. Intravenous injection of "914" (0.005 gm. per kgm.) into rabbits whose blood was infectious as shown above sufficed to render it non-infectious for periods up to five weeks.

L. W. HARRISON.

BERENS, C., and GOLDBERG, J. A. "Syphilis in Relation to the Prevention of Blindness. A Study of 100,000 Case Records." *J. Amer. M. Ass.* 1937, v. 109, 777-81. [14 refs.]

RECENT statistics by Berens and colleagues have shown that syphilis accounted for 5.3 per cent. of the blindness in 2,702 children in schools for the blind. Also that syphilis is responsible for a large proportion of the blindness which is classed as congenital. Other investigations have shown that blindness in pupils in schools for the blind and in persons applying for pensions on account of blindness is attributable to syphilis in from 3.4 to 15 per

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cent. of cases. These facts ought to make all who have to deal with the blind keenly on the look out for syphilis, with a view to the exploitation of accepted methods of anti-syphilitic treatment in the original patient as well as to tracing out and getting under treatment infections in the patient's immediate relatives. In order to ascertain how much of this salutary awareness of the possibilities of syphilis as a cause of blindness actually existed in the staffs of five institutions for care of eye diseases in New York the authors studied 100,000 of their records and found in them 5,969 in which syphilis might reasonably have been suspected as the cause of the eye disease. They found, however, that in these 5,969 cases the investigation in respect of syphilis had been most inadequate. This applied not only to the tracing of histories of the patients and their relatives, but even to blood tests, the total number of these carried out in the whole 5,969 having been only 2,237. The authors comment on the serious inadequacy of the follow-up by which parents of children suffering from syphilitic eye diseases might have been brought under treatment and more blindness prevented. In one clinic only 13 out of 145 patients with positive serum reactions had been so followed up. As a result of such investigations as were carried out forty-six still-births were found to have occurred in the families of the patients, in twelve instances syphilis affected the entire family and there had been two cases of syphilitic insanity and thirteen deaths from syphilis. Notes on effects of anti-syphilitic treatment appear also to have been very indifferent, the later state of the eye or any note on serum reactions having been omitted in a large number of cases. It thus appeared that golden opportunities to prevent much unnecessary blindness and other disabilities from syphilis had been sadly neglected.

L. W. HARRISON.

- V. HERFF, DOROTHEE. "Sogenannte Arzneimittelidiosynkrasien." [So-called Drug Idiosyncrasies.] *Deut. Med. Woch.* 1937, v. 63, 822-5; 898-9; 934-6; 968-72; 1044-6; 1115-18; 1157-9; 1225-7, 11 figs. [123 refs.]

IN a long paper on idiosyncrasies to various drugs the author includes some toxic effects of arsphenamine treat-

ment which are attributed to allergy. Those mentioned are, following Schreiner's classification, (1) the vasomotor symptom complex, (2) the fixed or local salvarsan exanthem, (3) the universal salvarsan exanthem, and (4) salvarsan dermatitis. The vasomotor shock usually occurs first after the 4th or 5th injection with one or more of the following signs, flushing, cyanosis of the face, swelling of the lips, eyelids, tongue and glottis, feeling of heat, urticaria, erythema, feeling of oppression, asthma, vomiting, fainting and (very rarely) death. The syndrome has been proved by appropriate tests by Schreiner (to whose paper in *Dermat. Ztschr.*, 1933, v. 66, 231, the reader is earnestly referred) to be a manifestation of allergy. The fixed exanthem occurs as an erythema, a patch of urticaria, or an œdema at one spot from which it quickly disappears. It appears at each successive injection and is a manifestation of local sensitisation. It should be regarded as a warning of a possible general susceptibility and an indication for application of appropriate tests; the author reports a case in which its appearances after 0.15 gm. neosalvarsan was disregarded, and the next injection, of 0.15 gm., was followed by a generalised exanthem, stomatitis, gingivitis, bilirubinuria and constitutional disturbance which might have been avoided if appropriate tests for allergy had been applied. The general salvarsan exanthem usually occurs after the 2nd to 4th injection. Accompanied by some constitutional disturbance, it is a morbilliform, scarlatiniform or urticarial eruption and disappears after some hours or days. During the fever a leucopenia is often observed following a leucocytosis with eosinophilia (60 per cent. eosinophiles have been reported). In many cases skin tests for salvarsan allergy have proved positive, but Milian thinks it is due to the biotrophic action of the salvarsan preparation on micro-organisms dormant in the body. The severest form of salvarsan dermatitis has been attributed to severe toxic disturbances of internal organs (liver, kidneys, thyroid), but Schreiner has shown undoubted evidence of salvarsan allergy in these cases. Amongst measures for prevention, besides care to ascertain beforehand any history suggesting an allergic disposition are mentioned three skin tests: (a) Intracutaneous injection of 0.01 to 0.02 c.c. of neo-salvarsan 1/100,000, 1/10,000 and 1/1,000 in three sites

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(or in cases where susceptibility to one of the following is suspected "606," 1/100,000; myosalvarsan, 1/100; neosilversalvarsan, 1/1,000; solusalvarsan, 1/100). The reaction is either an increase of the injection wheal and the red areola within 15 minutes or an oedematous red infiltrate which increases in size for 48 hours. In the author's own four cases of salvarsan allergy three gave positive reactions to this test, and the fourth, who appears to have become spontaneously desensitised, tolerated further salvarsan treatment. (b) The epidermal test in which dressings soaked in 1 to 10 and 1 to 3 neosalvarsan are applied to the skin. (c) In this, the Prausnitz-Küstner method a salvarsan tolerant syphilitic patient is injected intracutaneously in the back with 0.1 to 0.2 c.c. serum from a patient who is sensitive to salvarsan and 48 hours later intracutaneous injections of neosalvarsan are made both into the serum-injected spot and into another part of the skin. The former should show a reaction at once and the latter be negative. The author mentions the possibility of desensitising the patient, the initial dose being 0.002 g. neosalvarsan. The author sees absolute contra-indication to further salvarsan treatment only in the fourth, the severest form of salvarsan allergy, but with the fixed and the general exanthem (the third above) the greatest caution must be observed, injections being slow and doses very small. If the general exanthem returns, the patient should be sent to a clinic where he might be desensitised.

L. W. HARRISON.

LEPINAY, E. "Evolution de la syphilis indigène marocaine depuis l'application des traitements modernes." [The Evolution of indigenous Syphilis in Morocco since the Advent of Modern Treatment.] *Bruxelles-Méd.* 1937, v. 17, 1780-803, 7 figs.

THE study of tropical syphilis and more particularly of that of Morocco is particularly interesting because this indigenous syphilis closely resembles the primitive syphilis of Europe at the end of the fifteenth century and also because one has sought the explanation of its fixity of character, which, unlike the European type, shows an absence, in the African Mussulman, of parenchymatous

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neuro-syphilis. Whether or no the theory of the importation of syphilis into Europe by the companions of Christopher Columbus is true, the fact remains that neither in Morocco nor in the regions of North Africa has the presence of syphilis been proved before its appearance in Europe ; it has been suggested that the Jews expelled from Spain carried the disease into Morocco ; in other words, the source of European and Moroccan syphilis is identical. Yet European syphilis soon began to change its character, losing its exuberance and beginning to show visceral and central nervous system manifestations, whereas Moroccan syphilis still shows the florid characters of that of the end of the fifteenth century ; in Morocco 75 to 90 per cent. of the indigenes but only about 30 per cent. of Jews are affected.

The most marked characteristics are :—In the primary stage the large numbers of mixed extra-genital chancres ; in the secondary the localisation and grouping of syphilides in the ano-genital region and in the tertiary the multiplicity—polymorphism—and dissemination of the lesions, the mucous membranes and palate frequently being involved. The rarity of visceral and parenchymatous central nervous system lesions is most remarkable.

Treatment—with mercury—was first commenced soon after the French occupation, but it was not till 1916 that arsenobenzol was first used followed by bismuth in 1922. However, treatment is never efficient according to modern doctrine, two-thirds of the cases failing to complete one course and many receiving only 3 or four injections. Results show that the proportion of hypertrophic and tertiary lesions is diminishing, as are sterility and abortions, whilst primary and secondary manifestations are more frequently seen. In general, syphilis seems to be losing its malignant character. On the other hand, neither arsenic nor inadequate treatment has caused an increase in visceral or parenchymatous syphilis, both of which are exceedingly rare.

On the other hand, there is no evidence that endemic malaria can in any way account for this ; perhaps the fact that these people do not take alcohol may have some bearing on the question.

As to why syphilis in Morocco has remained almost entirely muco-cutaneous there seems no clear explanation ; possibly it is due to tissue or cellular properties peculiar

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to the native—only the future will show whether the disease will ever take on its European form.

Meantime there is no doubt that treatment should be carried out when- and wherever possible ; the best means of preventing neuro-syphilis is by limiting the spread of the spirochæte even if inadequate treatment may cause occasional tragedies in individual cases.

Seven photographs show well hypertrophic and mutilating lesions seen in Morocco such as are rarely if ever seen in Europe.

T. E. OSMOND.

KLAUDER, J. V., and BUTTERWORTH, T. "Accidental Transmission of Syphilis by Blood Transfusion." *Amer. J. Syph., etc.* 1937, v. 21, 652-66.

THIS review of the literature on syphilitic infection by blood transfusion, with an account of a case in the authors' experience, contains a good deal of information which those whose duties entail the practice of transfusion ought to have at their finger ends. The article summarises in a table the main facts in 33 cases recorded in the literature. The incubation period ranged from one to four months, but in the majority it was from 2 to 2½ months, as occurs in rabbits inoculated intravenously. In view of the observations of Brown and Pearce that in animals partial or complete interference with the development of the chancre which falls short of eradication of the disease favours generalisation of the chancre, one might expect the outlook in transfusion syphilis to be less favourable than when a chancre has developed, but the authors feel there is insufficient evidence for a decision on this point. In 29 of the 33 cases reviewed by the authors the infection was conveyed in donors' whole blood, in two the medium was serum, in one (the authors') it was washed leucocytes, and in one the donor was infected by the recipient's blood. In the authors' case the recipient had received four injections of leucocytes from, respectively, two relatives, a physician and a friend's friend, and the rash appeared approximately two months after the last injection. In this case the authors discuss, without arriving at any conclusion, the ways in which the organism of syphilis might have reached the recipient, whether as phagocyted spirochætes or in an invisible

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form. The period of greatest infectivity is in the earliest years ; in the present series one donor had been infected seven years previously while another was in the incubation period. The authors comment on the comparatively large proportion of cases in which the donor was a relative and on the folly of omitting blood tests in these cases. The examination of the donor should include an enquiry into his moral character and recent exposures to infection, besides blood tests, both Wassermann and flocculation, of which the authors favour the micro-Meinicke. With regard to the risk of using, in emergencies, the blood of persons who have had syphilis, in persons whose early syphilis has been well treated the risk of transmission is estimated at less than 10 per cent. With congenital syphilitic donors who are adults, show no sign and have been treated, the risk is probably much less. McNamara, in Panama, treated some patients by transfusion from donors with a history of syphilis and with positive blood, but subsequently found no evidence that the disease had been transmitted. Tzanck and Werth report the case of a woman with no evidence of syphilis who was used for 18 transfusions and then showed evidence of tertiary syphilis with positive blood, but none of the recipients developed syphilis. Jones, Rothmell and Wagner cite three cases in which the donors had latent syphilis, but no infection of recipients followed.

L. W. HARRISON.

HANZLIK, P. J., LEHMAN, A. J., RICHARDSON, A. P., and VAN WINKLE, W., Jr. "Rapid Clinical Method for Estimation of Bismuth in Urine." *Arch. Dermat. & Syph.*, 1937, v. 36, 725-8.

THE authors describe in this paper what should prove to be a very useful clinical method of estimating the urinary excretion of bismuth. The technique appears to be very simple, thus: (1) Into a long pyrex test-tube (3×20 cm.) put 10 c.c. urine. (2) Add a tablet (0.04 g.) of potassium permanganate and 2 c.c. concentrated H_2SO_4 . The mixture foams, hence the precaution to use a long tube. (3) Boil gently for about two minutes. (4) Add a tablet (0.04 g.) of oxalic acid. The solution becomes decolorised and is allowed to cool. (5) Add a tablet (from 0.01 to 0.04 g.) of sodium sulphite and

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sodium sulphate and a tablet (0.05 g.) of sodium iodide. A yellowish green colour indicates the presence of bismuth. (6) Estimate amount by matching with a paper colour scale. The reagents were obtained from Eli Lilly and the colour scale from James H. Barry, 170 Van Ness Avenue South, San Francisco. Comparisons with the long oxidation colour method showed this one to be sufficiently accurate for ordinary clinical purposes.

L. W. HARRISON.

SCHLOSSBERGER, H. "Experimentelle Untersuchungen ueber die therapeutische Wirksamkeit von Arsenopyridin verbindungen bei Syphilis." [Experimental investigations of the therapeutic effect of arsenopyridin compounds in syphilis.] *Med. Klin.* 1937, v. 33, 1703-6. [24 refs.]

SCHLOSSBERGER'S experiments suggest that certain compounds of arsenic with pyridin may prove to be better than tryparsamide for the treatment of neurosyphilis. Since it has been shown that by attaching arsenic to the benzol ring substances can be made with a strong therapeutic effect on trypanosomiasis and spirochætosis, numerous workers have tried during the past ten years to achieve a greater parasitocidal effect through synthesis of arsenical compounds with a heterocyclic nucleus. A. Binz has made a large number of arsenical combinations with pyridin and experimentally and clinically a number of them have been shown by various authors to have a powerful therapeutic effect in trypanosomiasis especially and also in various spirochætosis. It has been shown also that certain pyridin compounds of arsenic, the monosodium salts of 2 pyridin-5 arsinic acid (BR 1) and of 3-amino-2-pyridin-5-arsinic acid, act well against trypanosomes which have become completely resistant to derivatives of the phenylarsinic acids including tryparsamide and the arsenobenzene compounds (except arsenophenylglycin).

In view of this it seemed to Schlossberger reasonable to try the effect of arsenopyridin compounds on experimental syphilis, using in the first instance mice, which are particularly convenient because in them it is easiest to determine the therapeutic effect of remedies on syphilis

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of the central nervous system. The animals were inoculated with pieces of rabbit chancre under the skin of the back, and the treatment was applied sometimes before the central nervous system could have been invaded (5 to 8 days after the infection) and sometimes after this event (at the earliest 6 to 8 weeks after the infection). For each preparation 4 to 5 mice were used. The animals were kept for three months to insure complete elimination of drug and recovery of surviving spirochaetes before the therapeutic effect was tested, by inoculating three rabbits one with gland and spleen and two with brain of each treated mouse. The rabbits were observed for 4 to 6 months, and in the event of no chancre appearing were tested further by gland transfer. Most of those preparations which appeared to have sterilised mice even when inoculated in the later stages were tested for their effect on syphilitic chancres in rabbits and also for sterilising effect on rabbit syphilis. The author shows in a table the results of tests on these lines of 36 arsenopyridin preparations and of tryparsamide, neosalvarsan, neosilversalvarsan, and solganal. The experiments, which were carried on for over seven years, showed that most of the arsenopyridin derivatives had no useful spirochæticidal effect in experimental syphilis of mice, and the same applied to tryparsamide given either early or late and to neosalvarsan, neosilversalvarsan, and solganal given in the later stages of the infection. On the other hand, certain of the arsenopyridin preparations, namely, the monosodium salts of

2-pyridin-5-arsinic acid (BR 1)

3-amino-2-pyridin-5-arsinic acid (BR 23)

3-brom-2-pyridin-5-arsinic acid (BR 45)

N-methyl-2-pyridin-3-arsinic acid (BR 47)

2-pyridin-5-arseno-5¹-(2¹-oxyphenylglycin) (BR 68)

N-dioxypropyl-2-pyridin-5-arsinic acid (1037)

and the disodium salts of

2-oxy-3-acetaminopyridin-5-arsinic acid (BR 25)

2-pyridin-5-arseno-1¹-(3¹-amino-4¹-oxy) benzol
(BR 34)

N-acetarsanilic acid-2-pyridin-5-arsinic acid (1049)

sterilised the mice even when given in the later stages after invasion of the central nervous system. The preparations did not, however, prove very efficient when

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administered to rabbits with experimental syphilis, but in this respect they were not worse than tryparsamide. The author thinks that in particular, BR 1, BR 23, BR 25, 1037 and 1049, which are very diffusible and better tolerated than tryparsamide, are worthy of trial in syphilis of the central nervous system.

L. W. HARRISON.

VÁMOS, J., and BÖHM, A. "Die Wirkung der Arsenobenzol-präparate auf den Fetus" (Tierversuche). [The Effect of the Arsenobenzol Preparations on the Fœtus (Animal Research).] *Arch. f. Dermat. u. Syph.* 1937, v. 176, 245-55, 9 figs.

THE method of Janesco by which, under treatment of the tissues with silver nitrate and thiosulphate, the presence of salvarsan can be detected as brown or black grains has advanced knowledge on the distribution of the remedy very materially. By this method the authors have determined the distribution of arsphenamine in the placental tissues of pregnant rabbits. They found deposits in the intervillous spaces and the vessels of the decidua, but not in the chorion or in any of the foetal tissues. Also no arsenic was detected in the foetus by the method of Gudzeit, so that the placenta holds back arsphenamine remedies as it does many dyes. The authors discuss the methods by which arsphenamine treatment may protect or cure the foetus in spite of the apparent hold-up of the drug at the placenta. As infection of the foetus occurs after the fifth month energetic treatment of the mother in the earlier months very often does prevent the infection. When the foetus is infected possibly the arsphenamine passes in some form not detectable by methods at present available. Failing such passage one must assume that the syphilis of the foetus is controlled by immune substances formed in the mother under the stimulus of the arsphenamine and passed through the placenta. The fact that the action of such antibodies must be somewhat uncertain emphasises the importance of starting treatment as long before the fifth month of pregnancy as possible.

L. W. HARRISON.

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REIN, C. R., WISE, F., and CUKERBAUM, A. R. "The Control and Prevention of Transfusion Syphilis. Results of a Statistical Survey and Suggestions for More Adequate Procedures for Detection of Syphilis in all Donors." *J. Amer. M. Ass.* 1938, v. 110, 13-18, 2 figs. [11 refs.]

THESE authors believe that the precautions usually taken to prevent the transmission of syphilis by blood transfusion are very frequently quite inadequate and that many more cases occur than are recorded or than is generally believed. The results of a questionnaire sent to 64 hospitals show that they are right; figures are given in Table 1.

Table 2 sets out a simple and rapid method of "typing and cross matching and detecting syphilis in blood donors" which can be carried out on a single slide in half an hour. For the diagnosis of syphilis the well-known Kline exclusion and diagnostic tests are recommended and full details of these are given—clearly set out in Fig. 2.

It is claimed that the carrying out of sensitive blood tests on all donors immediately prior to transfusion would obviate the necessity of periodic testing of donors and would practically eliminate all risk of infection of the recipient.

[No blood test yet devised can be expected to detect syphilis within the first three weeks of infection, yet it is well known that spirochætes may be circulating in the blood stream nearly all this time; it would appear, therefore, that physical examination of the patient and careful history taking are as important as blood tests. In addition the veracity and morals of the donor would appear to be useful safeguards.—T. E. O.]

T. E. OSMOND.

LEVADITI, B., in collaboration with A. VAISMAN.
"Métallo-prévention bismuthique de la syphilis."
[The Prevention of Syphilis by Metallic Bismuth.]
Bull. Soc. Path. Exot. 1937, v. 30, 849-55.

1. IN Saigon-Cholon various preparations of Bi including Muthanol, Bivatol and Neo-Cardyl were

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employed in weekly injections to see if they would prevent prostitutes from acquiring syphilis. The total dosage was 1.5 g. (25 per cent. of the cases) and the mean 3.55 g. to 5.17 g. Of 67 prostitutes so treated 10 disappeared, 48 remained at liberty and continued treatment and 9 were admitted to hospital for various forms of V.D. other than syphilis; not one of the 57 acquired syphilis, whilst of 28 control women 15 acquired the disease. The treatment was well tolerated, very efficient, easily applied, and was considered particularly suitable for native prostitutes.

2. Rabbits weighing about 2 kg. were injected with subnitrate of Bi in almond oil in doses of 0.5 c.c. (0.036 g. Bi) and later on 0.25 c.c. (0.018 g. Bi) per kg. at intervals of 15 to 16 days and were also inoculated with the Truffi strain of *Sp. pallida*.

- (a) Five rabbits survived 51 to 100 days after 1 to 7 injections of Bi and 1 to 5 inoculations with *Sp. pallida*. None contracted syphilis.
- (b) Four rabbits survived 210 to 250 days after 6 to 8 injections of Bi and 5 inoculations. None contracted syphilis.
- (c) Eight rabbits survived 303 to 340 days after 8 injections of Bi and 6 inoculations. In this series after 8 injections of Bi had been given 3 more inoculations were given during the 154 days following cessation of treatment; 6 out of these 8 rabbits became infected 154 days after the last Bi injection showing that Bi immunity only lasts so long as there is a definite amount of Bi present in the tissues. As soon as the Bi falls below a certain level the animal becomes as susceptible as a normal one. This susceptibility can be expressed by the formula $p = \frac{r}{v}$, where p is the degree of acquired refractoriness, r the Bi reserve and v the speed of elimination.

A Table is given showing details of the third batch of rabbits.

T. E. OSMOND.

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HAZEN, H. H., SENEAR, F. E., PARRAN, T., SANFORD, A. H., SIMPSON, W. M., and VONDERLEHR, R. A.
"Serologic Evidence of Syphilis in Malarial Patients."
Arch. Dermat. & Syph. 1938, v. 37, 431-38. [14 refs.]

IN 1935 the blood of 36 cases of malaria was submitted to 457 tests by various methods with 14.4 per cent. positive and 6.1 per cent. doubtful reactions; in only 14 of the 36 cases was there complete accord in the results and when tests were repeated the results frequently differed from the original ones.

A second series of 266 patients was tested by the Hinton, Kline (diagnostic and exclusion) and Kolmer methods, and the percentage of positive reports varied from 4.4 with the Hinton to 16.2 with the Kline-exclusion test; in 2.3 per cent. all tests were positive. On a recheck 80 positive results fell to 56.

The opinions and findings of various authors are quoted.

Fischer and Günsberger state that malaria may give a positive Wassermann reaction due to the presence of specific antibodies for erythrocyte lipoids and that it may be distinguished from syphilis by using an erythrocytic extract.

Businco and Foltz believe that malarial cases giving a strongly positive reaction are also syphilitic; they may give partial reactions.

Cherefeddin reported 10 positive reactions in 76 cases of malaria.

Eller also obtained positive results, but concluded that the causes were different in syphilis and malaria.

Lloyd and Mitra found 14 per cent. positive, but this figure is well within the syphilitic rate of the patients whom they studied, and conclude that positive reactions are due either to associated syphilis or over-sensitive tests.

Marcialis investigated 225 cases and found that during the pyrexial period partial reactions were produced, but that the Wassermann reaction was invariably negative in the apyrexial periods.

Salvioli found that acute malaria gave weakly positive Wassermann reactions.

Saunders and Turner think that acute malaria may act as a provocative agent to bring a reagin of low titre up to the complement fixing level.

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Wilson and Levin studied 262 cases and believe that in 13 a positive reaction was definitely due to malaria. The tests used—Kolmer, Kahn and Kline—disagreed in 8 out of the 13 cases.

Heinemann examined the cerebro-spinal fluids of 150 malarial patients with no false positives.

It is concluded that malaria, like leprosy, may give false positive reactions, though it is remarkable that three diseases caused by such biologically different organisms as an acid-fast bacillus, a spirochæte and a plasmodium should all give such reactions.

T. E. OSMOND.

FUJITA, Z. "Klinische und histologische Studien ueber die sog. Esthiomène." [Clinical and Histological Studies of so-called Esthiomène.] *Japanese J. Dermat. & Urol.* 1937, v. 42, 261-2.

THIS is an abstract of an original article in Japanese. After presenting the usual evidence that Esthiomène is a manifestation of L.i. the author states as follows respecting the histological findings:—

(a) The structure of the polypose tumours, the elephantiasoid hyperplastic places, the ulcers of the rectum and vulva, the rectal strictures and the fistula presented the appearances of a chronic or subacute inflammatory granulomatous lymphoma.

(b) Every place that is affected shows marked connective tissue formation. The process begins with exudative infiltration with lymphocytes, histiocytes, etc., and gradually becomes granulomatous and matted and surrounded by organised tissue.

(c) The development of the outgrowth of granulation tissue from the infiltrates may become very similar to the bubo.

The author supposes that the process arises from infection and swelling of the deep-lying lymph glands and consequent lymph-stasis.

L. W. HARRISON.

TRAVASSOS, A. "Sur la présence du virus de la maladie de Nicolas et Favre dans la muqueuse rectale chez une malade présentant un rétrécissement du rectum."

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[The Presence of the Virus of Nicolas-Favre Disease in the Rectal Mucous Membrane of a Patient with a Rectal Stricture.] *C. R. Soc. Biol.* 1937, v. 126, 601-3.

IN 1932 Ravaut, Levaditi, Lambling and Cachera demonstrated experimentally the presence of the virus of L.i. in the rectal mucous membrane of a patient suffering from ulcero-vegetative ano-proctitis. In the present paper Travassos reports a similar experiment. In a woman with a severe rectal stricture, Frei and Ito-Reenstierna tests both positive but Wassermann negative, a fragment of the rectal mucous membrane was removed at the level of the stricture, and an emulsion of it was injected into an inguinal gland of a guinea-pig. After 11 days the guinea-pig was killed, and emulsion of its inguinal glands, by now enlarged, was injected intracerebrally into two mice. The brains of the mice, killed 7 and 12 days later, showed the characteristic lesions of L.i., and emulsion of one of them evoked good Frei reactions in three patients suffering from L.i., but none in four suffering from other diseases. Other controls and further passages through mice showed that the authors were in fact dealing with virus of L.i. Tested by the method of Wassén, intracutaneous inoculation of guinea-pigs, the virus showed a progressive weakening with successive passages. Whereas emulsion of the first mouse's brain produced a severe ulceration at the site of inoculation, healing not occurring until the 16th day, emulsion obtained at the fourth passage produced only a small nodule which had disappeared by the 8th day. The author thinks the method of proof by inoculation of animals with emulsion of mucous membrane is important in such a case as this in which another biological reaction (Ito-Reenstierna) was also positive.

L. W. HARRISON.

MALAMOS, B. "Nachweis und Kultur des Erregers des Lymphogranuloma inguinale." [Recognition and Culture of the Organisms of Lymphogranuloma Inguinale.] *Zent. f. Bakt. I. Abt. Orig.* 1937, v. 140, Beiheft 164-8.

AFTER the demonstration of the Miyagawa bodies in L.i. infected tissues the author, with Nauck, eventually

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succeeded in seeing them in their own material. He describes the results of inoculations of mice, monkeys and marmots, the symptoms, histological appearances of the tissues and eventually the appearances and staining characteristics of the Miyagawa bodies. Concerning the appearances and distribution of the bodies, he says that the fairly even-sized round bodies are stained by Giemsa quite definitely reddish or blue-violet, as are the organisms of psittacosis. The bodies are extra- as well as intra-cellular, and in the latter case may be in more or less dense heaps mostly within vacuoles. The affected cells are not only the histiocytes, but also lymphocytes and sometimes polynuclear cells. Sometimes in a cell the bodies are collected like a cap on the nucleus, like trachoma bodies. Like Herzberg and Koblmüller, he often found double forms and also short chains. A feature mentioned by Herzberg and Koblmüller, but not by Miyagawa and colleagues, is the relative scarcity of the bodies in most preparations and also their irregular distribution. The bodies were cultivated by the method of Goodpasture and Woodruff on the chorio-allantoic membranes of fertile eggs 10 to 11 days after commencement of incubation. Successful culture was most easily demonstrated by mouse inoculation, the bodies not being easily found in smears of the membrane; in the latter respect the author's experience differed from the Japanese. The membrane appeared unchanged or at most only slightly hazy, with little flecks.

When the membrane covering the cornea of a 5-to-6-day-old rabbit is inoculated with L.i. mouse brain and removed after periods varying from 8 to 48 hours for histological examination, after staining by Giemsa, in certain of the cells near the nucleus one can distinguish a smaller or greater mass of light blue protoplasmic substance. When these blue inclusions increase in size there appear in them fine violet-red bodies like the L.i. bodies mentioned above. The inclusion bodies increase in size, the L.i. bodies within them increase in numbers, and around groups of them appear vacuoles in the cytoplasm. The blue ground substance starts to disintegrate into threads or larger granules, the violet-stained L.i. bodies increase still more in numbers and tend to fall out of the vacuoles in the process of fixation so that in specimens taken at later stages of the infection one may

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see in the vacuoles only some clumps of the blue ground substance. The development of the virus does not seem to damage the epithelial cells of the membrane and only seldom does one see pycnotic changes in their nuclei. It should be noted that often the nuclei are indented by the vacuoles. Inoculation of mice with the infected corneal covering results in the typical lesions of L.i. The development of the L.i. virus in tissue culture corresponds closely to the development of the canary virus (Kikuth).

L. W. HARRISON.

MAURO, E. "Une rickettsia comme agent étiologique de la maladie de Nicolas-Favre" (Note préventive). [A Rickettsia as the Causal Agent of the Nicolas-Favre Disease (Preliminary Note).] *Boll. Sezione Ital., Soc. Internaz. di Microbiologia*. Milan. 1937, v. 9, 339-41.

MAURO has found in smears of glands of a case of L.i. the granules which Miyagawa and colleagues believe to be the causal organism. The specimens were stained with Leishman, as also by the Fontana-Tribondeau method and Victoria blue as recommended by Herzberg and Koblmüller [this *Bulletin*, 1937, v. 12, 875]. The granules were also seen in blood smears with the cytoplasm of histiocytes. The author was struck by the resemblance of the organisms to the Rickettsia bodies found in typhus fever and accordingly inoculated intraperitoneally a guinea-pig with the blood containing them. The result was a rise of temperature which persisted for some days. Similar inoculations with normal blood produced no rise of temperature. Cultures of the peritoneal fluid of the febrile animal were negative, but smears stained with Leishman, with Victoria blue and by the Fontana method showed many more Rickettsia bodies than did the blood used for the original inoculation.

L. W. HARRISON.

RIOU, M. "Le traitement de la lymphogranulomatose inguinale subaiguë." [The Treatment of Subacute

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Lymphogranuloma Inguinale.] *Bull. Soc. Méd.-Chirurg. Indochine.* 1937, v. 15, 710-39. [6 pages of refs.]

THE methods of treating this disease are so varied that it is obvious that none is by any means specific or uniformly successful. This author gives a long account of his experience in over 300 cases at Dakar and in Hanoi.

Local treatment may take the form of: (1) Surgical excision of all or some of the glands, neither of which is recommended.

(2) Radio-therapy, which has its advocates, but which is often not available.

(3) Injection of various substances such as Lugol's solution, Calot's mixture, xylol oil with iodoform, glycerine, milk, pus vaccine and essence of turpentine; all of these give occasional but inconstant successes—glycerine being, on the whole, the best.

General treatment includes (1) chemo- and (2) bio-therapy.

(1) Amongst the many drugs tried the following are the most important. Emetine, gold salts, iodine, tincture of iodine, Lugol's solution, neoriodine, potassium iodide, ammoniated sulphate of copper, salicylate of soda, salts of antimony, and lantol (colloidal rhodium). Of these colloidal rhodium, anthiomaline, salicylate of soda and glycerine given alone or as a combination of two have given the best results. Salicylate of soda is given intravenously twice daily in doses of 0.5 g. or by mouth (with milk) in doses of 6 to 8 g. several times a day. Anthiomaline (antimony III.-thiomalate of lithium) is given intravenously in doses of 15 to 21 centigrams with a total dosage of 1.5 g. to 2.8 g.

Colloidal rhodium (electric colloidal rhodium 0.0001 mgm., electric colloidal gold 0.00001 mgm., solution of sodium chloride 0.8 per cent., 1 c.c.) is given intravenously daily for 10 to 15 consecutive days, two to four doses a day at two sittings.

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13			cases treated with lantol gave 10 cures and 3 improved.
6	„	„	anthiomaline gave 2 cures—2 much improved and 2 improved.
16	„	„	lantol and anthiomaline gave 7 cures—8 much improved and 1 improved.
3	„	„	lantol and sodium salicylate gave 1 cure—1 much improved and 1 improved.

(2) Bio-therapy includes tuberculin, auto-hæmotherapy streptococcus broth filtrate, convalescent serum, vaccino-therapy, antigeno-therapy, all of which have given very variable results.

On the whole chemo-therapy is to be preferred. In the pure form of L.i. salicylate of soda and anthiomaline, alone or together, give the best results ; colloidal rhodium is particularly indicated in the early stages. It is always of importance to make sure that one is not dealing with a mixed infection, *e.g.*, L.i. complicated by syphilis, chancroid or a pyogenic infection ; these call for special treatment. Perhaps the most important point in treatment is *rest*, which often will bring about a cure unaided ; the next important point is to treat the case at the earliest possible moment.

There is a comprehensive bibliography of more than one hundred references.

T. E. OSMOND.